

DO NOT ENTER: /TQ/

02/22/2009

Docket No.: 2870-0277PUS1  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Kazuhiro TSUKAGOSHI et al.

Application No.: 10/808,333

Confirmation No.: 5434

Filed: March 25, 2004

Art Unit: 2826

For: TERMINAL AND THIN-FILM TRANSISTOR

Examiner: T. N. Quach

DECLARATION UNDER 37 CFR 1.132

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Kazuhiro TSUKAGOSHI, declare and say as follows:

1. I am a Japanese citizen having a post office address of Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Central 4, 1-1-1, Higashi, Tsukuba, Ibaraki 305-8565 Japan.

I received my Doctor Degree from Physics department, Graduate school of Science, Osaka University in September, 1995.

I have been employed by RIKEN and then have been employed by National Institute of Advanced Industrial Science and Technology (AIST).

I have been engaged in research and development of current injection control for organic transistor.

2. I am familiar with U.S. Application No. 10/808,333, of which I am a co-inventor.

I have reviewed all Office Actions issued in connection with this application. I have also reviewed all of the references cited by the Examiner in these Office Actions.

3. The following demonstrates that it is impossible to replace substrate 202 of Awano (U.S. 7,084,507) (hereinafter Awano '507) with an organic material having a 6-membered carbon ring.

### Discussion

It is my opinion that it is impossible to replace substrate 202 of Awano '507 with an organic material having a 6-membered carbon ring for the reasons discussed herein. The sublimation temperature of an organic material having a 6-membered carbon ring is much lower than the growth temperature of a carbon nanotube. Specifically, carbon nanotubes require an approximate temperature of 400°C in order to grow. In stark contrast, organic materials having 6-membered carbon rings have a sublimation temperature of approximately 200°C to 300°C. As a result, it is not possible to grow a carbon nanotube on a substrate of an organic material having a 6-membered carbon ring.

Attempting to grow a carbon nanotube on a substrate of an organic material having a 6-membered carbon ring would result in the decomposition or sublimation of the substrate before growth is completed. Decomposition or sublimation would occur regardless of the carbon nanotube growth method employed (including the method disclosed by Awano '507).

Thus, it is impossible to replace substrate 202 of Awano '507 with an organic material having a 6-membered carbon ring.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
Signature

Kazuhito TSUKAGOSHI

\_\_\_\_\_  
Typed or Printed Name

12/11/2008  
Date